SANTA CRUZ BIOTECHNOLOGY, INC.

Cytokeratin 6 (LHK 6): sc-53260

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The Power to Question

BACKGROUND

Cytokeratins comprise a diverse group of intermediate filament proteins (IFPs) that are expressed as pairs in both keratinized and non-keratinized epithelial tissue, where they constitute up to 85% of mature keratinocytes in the vertebrate epidermis. Cytokeratins play a critical role in differentiation and tissue specialization and function to maintain the overall structural integrity of epithelial cells. The α-helical coiled-coil dimers associate laterally end-to-end to form 10-nm diameter filaments. Cytokeratins are useful markers of tissue differentiation and, in addition, aid in the characterization of malignant tumors. Interleukin-1 and TNFα induce transcription of Cytokeratin 6 in epidermal keratinocytes via the C/EBPβ transcription factor. In humans, multiple isoforms of Cytokeratin 6 (6A-6F), encoded by several highly homologous genes, have distinct tissue expression patterns, and Cytokeratin 6A is the dominant form in epithelial tissue. The gene encoding human Cytokeratin 6A maps to chromosome 12q13.13, and mutations in this gene are linked to several inheritable hair and skin pathologies.

REFERENCES

1. van der Velden, L.A., et al. 1993. Cytokeratin expression in normal and (pre)malignant head and neck epithelia: an overview. Head Neck 15: 133-146.
2. Marceau, N. and Loranger, A. 1995. Cytokeratin expression, fibrillar organization and subtle function in liver cells. Biochem. Cell Biol. 73: 619-625.
3. Fuchs, E. 1995. Keratins and the skin. Annu. Rev. Cell Dev. Biol. 11: 123-153.
4. Quillien, V., et al. 1995. Serum and tissue distribution of a fragment of Cytokeratin 19 (CYFRA 21-1) in lung cancer patients. Anticancer Res. 15: 2857-2863.
5. Mukhopadhyay, T. and Roth, J.A. 1996. Functional inactivation of p53 by antisense RNA induces invasive ability of lung carcinoma cells and down-regulates cytokeratin synthesis. Anticancer Res. 16: 1683-1689.
6. Machesney, M., et al. 1998. Activated keratinocytes in the epidermis of hypertrophic scars. Am. J. Pathol. 152: 1133-1141.
7. Komine, M., et al. 2000. Inflammatory versus proliferative processes in epidermis. Tumor necrosis factor α induces K6b keratin synthesis through a transcriptional complex containing NFκB and C/EBPβ. J. Biol. Chem. 275: 32077-32088.

CHROMOSOMAL LOCATION

Genetic locus: KRT6A/KRT6B/KRT6C (human) mapping to 12q13.13; Krt6a/Krt6b (mouse) mapping to 15 F2.

SOURCE

Cytokeratin 6 (LHK 6) is a mouse monoclonal antibody raised against an 11 amino acid peptide corresponding to the C-terminal region of Cytokeratin 6 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cytokeratin 6 (LHK 6) is recommended for detection of Cytokeratin 6 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Cytokeratin 6: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Fang, S., et al. 2008. Comparative proteomics analysis of cytokeratin and involucrin expression in lesions from patients with systemic lupus erythematosus. Acta Biochim. Biophys. Sin. 40: 989-995.
2. Rauner, G. and Barash, I. 2012. Cell hierarchy and lineage commitment in the bovine mammary gland. PLoS ONE 7: e30113.
3. Kokado, M., et al. 2016. Effects of epiplakin-knockdown in cultured corneal epithelial cells. BMC Res. Notes 9: 278.
4. Kuga, T., et al. 2016. FAM83H and casein kinase I regulate the organization of the keratin cytoskeleton and formation of desmosomes. Sci. Rep. 6: 26557.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CONJUGATES

See **pan-Cytokeratin (C11): sc-8018** for pan-Cytokeratin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.